DEPARTMENT OF INFORMATION TECHNOLOGY

Gordon Bruce, Director and Chief Information Officer
Keith Rollman, Senior Advisor

OVERVIEW

The Department of Information Technology is charged with maintaining the City's extensive computer and telecommunications networks and also with finding new ways to use technology in general to improve city services for our customers – Honolulu's residents and businesses.

STRATEGY AND PROGRAMS

To enable the City and County of Honolulu to best manage all of its IT resources, the Department of Information Technology (DIT), under guidance from the IT Steering Committee (ITSC), develops and directs an integrated network of computer resources that provide information technology and telecommunications services to all city agencies and authorized users. Through centralized management of IT services, all users of the City's network are able to more effectively share data, information, technology, resources and technical expertise in a cost-effective and efficient manner.

In conjunction with information technology management, the Department of Information Technology promotes user self sufficiency by establishing a working environment where agencies are encouraged to perform simple information technology tasks at their own sites. DIT makes available the necessary staff, data, tools, training and any necessary assistance to enable users to attain greater self-sufficiency.

The City also recognizes the continuing need to work in concert with the entire community – federal (including the military), state and county agencies as well as the private sector and the public. The Department of Information Technology (DIT) continuously promotes an environment of automated information exchange using various technologies to improve the delivery of city services:

Customer Service

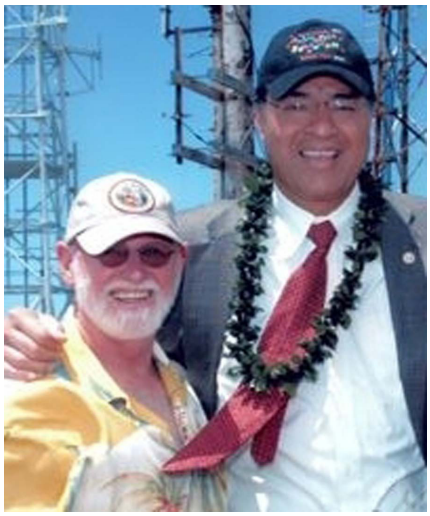
- Improve underlying information technology infrastructure
- Bring legacy systems to current state-of-the-art levels
- Expand E-government (more online/less inline)
- Improve agency workflow with a move to a less paper oriented methodology
- Improve interoperability of a common radio system improving communications between and amongst agencies
- Expand wireless technologies throughout Oahu through private partnerships and government partnerships
- Improve opportunities for local tech startups
- Seek ways to enhance economic development through technology

The Director of Information Technology has the primary responsibility of managing all IT resources and services in the City and County of Honolulu. The Director is also given the title of Chief Information Officer (CIO) of the City and County of Honolulu with the responsibility for developing the City's long-range IT-related plans, goals and objectives, as well as measures for its achievement.

The CIO ensures that all IT plans are consistent with, and supportive of, the stated business needs of the various departments within the City and County of Honolulu.

Chapter 12 of the Revised Charter, delineates the powers, duties and functions of the Director of the Department of Information Technology, as follows:

1. Operate information systems excluding those systems maintained by the Board of Water Supply and any other semi-autonomous agencies created by ordinance;
2. Provide technical expertise in information systems/technology to the City government;
3. Assist the managing director in management information analysis and evaluation;



Mayor Hannemann and Director Bruce

4. Advise the Mayor on information technology matters, as it relates to government operations and the development of a tech industry in Honolulu;
5. Provide objective third party guidance in the selection of technologies for all city and county departments;
6. Facilitate an integrated approach to technology deployment in the area of public safety;
7. Perform such other duties as may be required by law.

While the Department of Information Technology has the primary responsibility to ensure that the City's data and telecommunications needs are adequately met and computer resources are effectively managed, the director of each city agency is responsible for the following areas:

1. Each department, with the assistance of DIT, develops long-range and short-range plans for utilizing information technology within their department. These plans are specific as to departmental priority. Planned projects include anticipated benefits to be gained, such as increases in staff productivity and efficiency, lower operating costs, and/or anticipated increases in services to the public. Departmental plans are updated, as may be necessary, to reflect additions and changes;
2. Together with DIT, determine the priority and level of internal coordination necessary to adequately support all departmental IT activities and delegate these responsibilities to appropriate departmental personnel;
3. Include in the department's annual budget request, funding for those projects that have been given technical approval from the Department of Information Technology;
4. Present written requests to the Department of Information Technology for all IT services desired using the appropriate designated forms;
5. Request assistance from the Department of Information Technology on the need to train designated staff members in the use of standard IT hardware and software utilized within the City;
6. As the "owner agency" of electronic data files, provide the Director of Information Technology with written approval authorizing its release to other government agencies, private organizations and the public;
7. As an agency requesting the use of electronic data, obtain the consent for the use of data from the appropriate "owner agency." The Department of Information Technology, as custodian of all electronic data files, will require approval for access from the "owner agency" prior to its release;
8. Develop and implement adequate departmental security procedures consistent with the security policies established by the Department of Information Technology;
9. As member of DIT Steering Committee, help to identify and prioritize all DIT project requests;
10. Develop a department Technology Risk Assessment with the help of the Department of Information Technology for backup/recovery and disaster preparedness.

The head of each non-city organization receiving Information Technology (IT) services from the City's computer resources is responsible for the following areas:

1. Ensure compliance with all standards, security policies and procedures provided by the Director of Information Technology including all copyright and privacy laws;
2. Obtain the consent for the use of data from the appropriate "owner agency." The Director of Information Technology, as custodian of all data residing in the central computing facility, will still require approval for access from the agency charged with maintaining the accuracy and timeliness of the data;
3. Inform the Director of Information Technology of any changes or deviations in the intent of the IT services provided;
4. Provide training to staff members who will directly interact with the computer. Obtain assistance for training from the Director of Information Technology to ensure that staff members are qualified to utilize and work with appropriate hardware, software, and firmware in a shared IT environment;
5. Assume all costs for the requested Information Technology (IT) services, including personnel cost, data communication cost, hardware, software, and related machine processing cost.

e-Government (from electronic government), also known as e-gov, digital government, online government refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses, and other arms of government. e-Government may be applied by the legislature, judiciary or administration, in order to improve internal efficiency, the delivery of public services, or processes of democratic governance. The primary delivery models are Government-to-Citizen or Government-to-Customer (G2C), Government-to-Business (G2B) and Government-to-Government (G2G) & Government-to-Employees (G2E). The most important anticipated benefits of e-government include improved efficiency, convenience, and better accessibility of public services.

DIT continues to add interactive/transactional features to the City Web site, including new online application processes. To date over 20 new online services have been introduced. There is also increased use and development of electronic forms for internal use by city employees. The next phase includes the deployment of a formalized e-governance program, Service Oriented Architecture (SOA) through the use of IBM Websphere Portal, Content Management and the rational toolset.

There are few areas where the application of new technology can bring about such significant improvements as with public safety. The Department of Information Technology works with Police, Fire, Department of Emergency Management, Department of Emergency Management and other departments to improve communications among all first-responders. In July 2006, the City and County of Honolulu completed its Tactical Interoperable Communications Plan (TICP). A full scale exercise was conducted in October of the same year to test the interoperable communications plan. The City is now recognized as a national leader in interoperable communications with its ability to communicate with over 20 different first responder agencies with disparate communications systems. The City took the lead through the Public Safety Oversight Committee, formed by the Mayor and headed up by the Director of the Department of Information Technology, to address this specific interoperable communications issue. Interoperable communications now exist island-wide over the City and County of Honolulu 800 MHz radio system.

The City is in the early planning stage for the eventual relocation of the Department of Emergency Management Operations Center, and its consolidation with the Joint Traffic Management Center. DIT will specify and design the technology to empower this state-of-the-art nerve center for disaster and crisis management (exercises are now conducted quarterly to test the technology and procedures).

DIT is further charged with supporting the newly deployed Access Controls and Monitoring Systems (ACAMS), solutions for facilities security, including credentialing, video surveillance and building access. This system complies with federal homeland security standards.

RESULTS

The City's computing facility consists of mainframes, midrange systems, servers, peripheral devices, network file servers, and specialized communications equipment, linked together to form a centralized computer system. Equipment is upgraded periodically due to technological obsolescence, opportunities and/or the costs to support such technologies.

The Director of Information Technology (DIT) and the agency requesting the application shall determine application requirements jointly through the Information Technology Steering Committee (ITSC) and WEB E-Governance Board. Applications refer to all facets of information processing including information technology, word processing, image processing, voice processing, and any technological changes that bring information directly to those who need it to effectively accomplish their goals. The agency heads maintain primary responsibility for ensuring that application requirements are accurately met.

The Department of Information Technology is responsible for implementing a security system that ensures the accuracy and integrity of electronic data and prohibits unauthorized access to city-owned computer resources. The director is designated as the central security administrator to develop security policies, guidelines, and procedures. The user agencies enforce the policies at the local site. The security system procedures address the responsibilities of the owners of resources, the custodian of resources, the functions of departmental security administrators and the central security administrator, and individual accountability.

Each year involves the continuance of several major projects that will update and reshape DIT's services at the City and County of Honolulu. The director and his division chiefs established a system for prioritizing the projects that are handled by the department.

Projects were categorized using the following criteria:

1. Required by law
2. Mayor's directive
3. DIT director priorities
4. Required by city audit
5. Obsolescence
6. Homeland security
7. Maintenance
8. Funded
9. Other / ROI

A new project/portfolio management tool using CA Clarity was created to consolidate reporting by the various divisions and managers in a central data base. This information is used to track the progress of each project to better facilitate management oversight.

A foundation for the development and deployment of the new applications, along with enabling the reuse of applications, required a re-architecting of the hardware and software infrastructure. A detailed review of existing and future needs resulted in the development and subsequent deployment of both production and disaster recovery facilities. The new architecture supports new IBM Z-Series mainframes, new P-Series Midrange systems, new IBM SAN solutions (DS8100), new IBM SAN Volume Controllers, new fiber channels, storage virtual controllers and CISCO directors. The production system is mirrored across a private fiber channel utilizing Dense Wave Division Multiplexing for reliability. This foundation

provides exciting, flexible opportunities to support the next phase, the virtualization of over 200 servers, and the addition of new server-based applications.

The largest project currently under way is the City and County of Honolulu's Enterprise Resource Planning (ERP) project. The RFP was awarded to CGI-AMS and separate office space was established for the contractors team and city personnel assigned to this massive project. This is a multi-million, multi-year project that will bring the city's main enterprise software in line with contemporary best practices for fiscal management of large municipal operations. On July 1, 2007, the financial component of the system went live (on time and on budget). This not only included the application itself, but significant infrastructure hardware and software upgrades to support the system. The first successful close of the financial system occurred in July 2008. During this time, over 40 additional projects were started and completed. They included systems for the Honolulu Police Department, Honolulu Fire Department. Applications include drivers licensing, motor vehicle registration (The City and County of Honolulu is the only county in the nation to run four different statewide drivers licensing and vehicle registration systems), electronic document management, and numerous new online services, to name a few.

A tremendous need to rebuild the operations infrastructure also continued during this past year. Outdated mainframes, unsupported operating systems and related software needed to be replaced, and a totally new hardware and software architecture needed to be designed and implemented to support the numerous projects underway. The Operations Division was able to accomplish this task without disruption of the existing services. Accomplishments included replacement of three outdated mainframes with new IBM Z-series equipment, new server platforms utilizing IBM P-Series equipment and a Storage Area Network solution utilizing IBM DS-8100 Storage arrays. All this was accomplished on time and within existing budgets. The Operations Division successfully completed an ERP disaster exercise in October 2007. This was a significant test of the newly architected system.

The City's 24 communication towers that support first responder radio systems, a vital function of emergency services, were in a state of serious disrepair. DIT embarked on a multi-year, $40+ million program of repair and replacement that will bring the system to an acceptable, hurricane resistant condition. Reconstruction has been completed on three vital tower locations with five more in their planning and design phase. Seven more are scheduled for repairs in 2008.

In addition, the City has made significant upgrades in the areas of interoperability with over 20 agencies now capable of interoperable radio communications island wide over the Honolulu 800 MHz radio system. The City is also well underway with contract negotiations for the required re-banding of the 800 MHz radio system in compliance with the FCC/Nextel mandates.

DIT staff continues to improve the city's communication network and has replaced antiquated legacy phone systems with new voice over IP equipment (VoIP). These units greatly reduce costs over conventional phone service, and at the same time, allow for more advanced uses and features. DIT is conducting an agency by agency roll out to VoIP beginning with completion of the Frank F. Fasi Municipal Building, the new Fire Department headquarters and police substations. As of December 2007, over 3,500 of approximately 9,000 VoIP telephones had been deployed replacing 14 disparate telephone systems. This is without any significant increase in the Department of Information Technology's budget.

The island-wide fiber backbone continues to be enhanced and expanded. Multiple interconnected gigabit ethernet over fiber networks now exist linking the city's facilities island wide.

The City's Wireless Enhanced 911 system celebrated its first anniversary in March of 2008. Kidnapping, domestic violence, and 911 misuse have been thwarted as a result of this new technology. A new imaging system to support vertical location within one foot is presently under development for deployment in 2009.

CULTURE OF USE

The City and County of Honolulu is currently providing free wireless Internet access services in select locations for Oahu users. Already, city WiFi hotspots can be found in Chinatown (an area identified by this administration for economic revitalization), Frank F. Fasi Municipal Building, Honolulu Hale, Neal Blaisdell Center, Satellite City Halls, on The Boat (public transit), and at six (6) district parks: Ewa Beach, Kalakaua, Neal Blaisdell, Nanakuli, Maili and Pilila'au, and at The Honolulu Zoo. Recently, CB Richard Ellis, one of the largest commercial real estate management companies in Honolulu, partnered with the City and is deploying free municipal WiFi at their facilities. Chinatown and surrounding areas have shown business and cultural revitalization with new art galleries, restaurants, and night life. Honolulu's Mayor Mufi Hannemann was presented with a City Livability Award for Outstanding Achievement by the US Conference of Mayors at its annual meeting. The award recognized the City's outstanding vision and leadership in revitalizing Honolulu's historic Chinatown to attract artists and new businesses, while preserving this vibrant neighborhood's unique culture. (www.honoluluhotzones.org).

Honolulu Hot Spots (WiFi)

Other potential locations under development for municipal wireless include public facilities such as the City's golf courses, beaches, TheBus (public transit), and other similar public facilities and locations. The future rail system will also be included in the City's wireless plans.

All of these free municipal wireless sites are provided through unique grassroots partnerships sponsored by the City and County of Honolulu and at no expense to the taxpayer.

The City and County of Honolulu's Economic Development plans can also benefit from wireless services that promote business and commerce in areas around Oahu such as Chinatown. For example, business opportunities and collaborations can be realized with offering advertising and promotion on city websites for events such as Chinatown's First Fridays, which has become a very popular venue bringing together local artists, entertainers and the public to celebrate Hawaii's special arts and culture. Numerous other opportunities await creation by the private sector as the City offers more and more of its services via grass roots partnered wireless solutions.

SUSTAINABILITY

Various city departments were convened by the Department of Budget and Fiscal Services to address the rising fuel oil prices and its impact to the City's operating budget and formed the Energy Issues Committee (EIC). The objective of the committee was to brainstorm energy reducing initiatives to offset the City's increasing energy costs. The EIC established three subcommittees: electricity, fuel usage and innovative ideas ("out-of-the box"). An employee awareness subcommittee was later added to help foster energy conservation at the individual employee level. In early 2007, the EIC evolved into the Mayor's Energy and Sustainability Task Force to develop a 10-year plan to make the City more energy efficient and sustainable. The Department of Information Technology's Senior Advisor, Keith Rollman, was identified as a key leader of the sustainability. Numerous server consolidations, virtualization and power management initiatives are taking place.

CONCLUSION

By continuing to employ high-tech solutions and expanding relationships with private sector partners, the City and County of Honolulu continues to keep pace with the best practices of other great cities. They have shown the way for the appropriate use of technology to offer citizens convenience and improved public safety, deliver city services faster and find better ways to economic development. The City and County of Honolulu's commitment to infrastructure, integration, interoperability and sustainability are demonstrated with significant funding and progress in everything from environmental services, transportation and technology.

The Department of Information Technology's staff demonstrate the ability to get the job done, on time, on budget and that caring for the citizens of Honolulu is a priority for this administration.

Digital Cities 2007 Award Winner

INC Magazine April 2007 issue recognized the City and County of Honolulu as the "fastest mover" in the country with specific recognition of our efforts in transportation and information. The Mayor, with his direction and emphasis on public safety, infrastructure, public services and sustainability, demonstrates his ability to move the City and County of Honolulu forward into the future. Additionally, The Center for Digital Government in 2007 ranked Honolulu 8th in the large city category–-populations of 250,000 or more when it comes to utilizing digital technology to connect its citizens with government. Cathilea Robinett, Executive Director for the Center for Digital Government stated "This year's winners have really raised the bar for cities."

The Department of Information Technology management and staff will continue to look at ways to not only meet the service delivery bar, but to push it to the next level when it comes to providing citizen centric safety, applications and economic stimulation.

ACCOMPLISHMENTS IN THE AREA OF PUBLIC SAFETY

- Tactical Interoperable Communications Plan completed to meet federal grant funding requirements
  - Radio Interoperability – Police, Fire, EMS, all branches of military, and various state agencies – recognized as a leader in the nation
  - Quarterly exercises to refine procedures and improve technical capabilities
  - Upgrades to the island-wide microwave system to digital, improving backup and redundancy. This was demonstrated during the power outage of 2007 when the first responder radio system continued to operate and giving first responders island-wide communications capabilities.
- HPD Automatic Field Reporting – enables officers to be on the road an additional 1 hour per shift.
- Telecommunications Tower Repairs for First Responder Radio System
  - 2 reconstructed
  - 3 underway
  - 7 repaired
  - Building and facilities reviewed, and plan developed for reconstruction of buildings and remaining towers. New facilities will be able to withstand Category 4 hurricanes. Bidding underway.
- 911
  - Corrected the 911 data base that had not been maintained for over three years under the previous administration and implemented an automated process to keep the system current.
  - Implemented enhanced 911 services to track wireless 911 calls within 100 meters of the caller. 56% off all 911 calls are from wireless phones, used to rescue hikers, prevent domestic abuse, and track and deter other crimes.
  - Upgraded the 911 Computer Aided Dispatch system

- HFD computerized building inspection system
- Island wide fiber upgrades to better serve first responders
- Physical security system upgrades utilizing 2003/2004 federal grants that were about to expire. Systems include access controls and monitoring. Areas secured include five sewage treatment facilities, FMB, Honolulu Hale and New HFD HQ. Areas presently under construction include HPD, FMB Phase 2, ENV Phase 2 and DTS.
- Successfully completed negotiations to re-band entire first responder communications system to meet federal requirements. This will be a four-plus million dollar project funded by Sprint/Nextel.

COMMUNITY SERVICE ACCOMPLISHMENTS

- Online pot hole hotline
- Online drivers test appointment
- Online motor vehicle fee inquiry
- Online motor vehicle title inquiry
- Online vanity plate order
- Online vehicle registration
- Online Dealer Vehicle Registration
- Online OTC SSN verification
- Online OTC drivers license
- Online Neighborhood Board
- Online forms
- Online DHR job application
- Online leave of absence application
- Online request for unbudgeted equipment
- Online appropriation and allotment voucher
- Online HPD health exam
- Met federal requirements for drivers licensing that enables the State to continue to receive federal highway funds.
- 50% complete on replacing 14 different disparate telephone systems. The main system is now over 30 years old. By the end of calendar year 2009 we will have a single telephone system (9000 phones) with two prefixes – one for public safety and one for non-public safety.
- Free Municipal Wifi. Developed a unique grass roots program that provides free municipal wifi in six district parks, Chinatown, Zoo, FMB, Honolulu Hale, NBC, all satellite city halls. This grass roots approach is unique nation-wide
- Redesigned city web site and began implementation of major upgrade to all aspects of the city web

ACCOMPLISHMENTS IN THE AREA OF FISCAL ACCOUNTABILITY AND TRANSPARENCY

- Replaced a 30-plus year financial system (ERP)
  - Implemented performance based budgeting system
  - Implemented Phase 1 of an enterprise wide asset management system to track all city assets, replacing four disparate and costly systems
  - Reduced paper reports from 600 to 40.
  - Improved requisition and contract management
- Inventoried and centralized all telecommunications agreements for the use of city properties and developed a revenue program. Centralized accounts receivable system in place
- Ordinance 05-020 – Telecom Revenue Generation
- Implemented Purchasing Cards (P-Cards) – annual savings >$1 Million
- Online CIP Financial Tracking System available for citizen review
- Replaced three obsolete mainframe systems that support critical city systems with two state-of-the-art systems at no additional cost to tax payers
- Payment Card Industry (PCI) certification enabling city to accept credit card payments
- Completed Phase 1 and 2 of an enterprise-wide Asset Management System – moving from five disparate systems to two

PROJECTS UNDERWAY FOR FY2008-2009

50+ Major Projects

- 2 Tower Reconstructs
- 7 Tower Repairs
- 800 MHz Re-banding (Nextel Funded)
- Payment Card Industry Certification
- E-911 Pictometry Upgrade (Mobile Funded)
- ERP – Payroll/HR
- Storage area network upgrade
- Server Consolidation/Virtualization
- PMO metrics projects
  - Clarity project management
  - Clarity financial reporting
- Computer Aided Dispatch
- DPP online permit applications
- Enterprise Asset Management – Phase 1 (Fed Funds)
- ACAMS – five more facilities (Federal Grants)
- Intelligence Reform and Terrorism Prevention
- 8 Electronic Document Management Apps
- Network mgt for public safety systems
- 8 new HFD systems - SOA
- First responder wireless system upgrade
- New facilities reconstruction support
- Licensing system – SOA
- ERP web portal – SOA
- Web portal replace – SOA
- VOIP – 1500+ phones
- 4 additional SOA projects
- Real Property Tax – online assessment mgt
- Cyber Security

By continuing to employ high tech solutions and expanding our relationships with private sector partners the City of Honolulu will continue to keep pace with the best practices of other great cities. We can use technology to offer our citizens convenience and improved security, and our business partners faster city services and better ways to access city business opportunities.

Please direct any specific inquires regarding the operations and policies of the City Department of Information Technology to: gbruce@honolulu.gov, Gordon Bruce, Director of DIT, City and County of Honolulu, 650 South King Street, 5th Floor, Honolulu HI 96813-3017